member, except for the electrode portions, to be fabricated in simple process steps. In addition, the arrangement can prevent a reflected light beam or a scattered light beam from being incident on the image sensing area from the side surface region of the optical member. As a result, it becomes possible to prevent optical noise such as flare or smear and fabricate a semiconductor image sensing element having excellent properties. Since the optical member is bonded directly over the micro-lenses on the image sensing area by using the transparent bonding member, a thin and compact semiconductor image sensing element can be implemented. For the transparent bonding member, a material having either or both of a UV setting property and a thermosetting property can be used by way of example. The transparent bonding member can be formed by a drawing method, a printing method, or the like.

[0030] In the case of bonding the optical member to each of the semiconductor image sensing elements on the semiconductor wafer, it is also possible to perform an electric test and the like with respect thereto and bond only the semiconductor image sensing elements that have been determined to be acceptable. A test can further be performed after bonding.

[0031] A first semiconductor image sensing device according to the present invention comprises: a semiconductor image sensing element; a package having a mounting portion to which the semiconductor image sensing element is fixed and metal thin wire connection portions; a fastening member for fastening the semiconductor image sensing element to the mounting portion of the package; metal thin wires for providing connection between the electrode portions of the semiconductor image sensing element and the metal thin wire connection portions; and a burying resin for burying the metal thin wires therein and protecting the metal thin wires and is made of a structure using the semiconductor image sensing element described above. In this structure, an inner wall of the package may be formed into a rough surface configuration.

[0032] The arrangement can prevent optical noise such as flare or smear and implement a thin and compact semiconductor image sensing device having excellent properties.

[0033] A second semiconductor image sensing device according to the present invention comprises: a semiconductor image sensing element; a mounting substrate having an opening wider than at least an image sensing area of the semiconductor image sensing element and having electrode terminals arranged around the opening to be connected to electrode portions of the semiconductor image sensing element by a face-down mounting method; and a molding resin formed on a mounting region between the mounting substrate and the semiconductor image sensing element connected to the electrode terminals via bumps provided on respective surfaces of the electrode portions of the semiconductor image sensing element and on a portion of the mounting substrate which is adjacent to this mounting region and is made of a structure using the semiconductor image sensing element described above.

[0034] The arrangement can prevent optical noise such as flare or smear and implement a semiconductor image sensing device having excellent properties. In addition, since the semiconductor image sensing element is mounted on the mounting substrate by a face-down mounting method using bumps, a thinner and more compact semiconductor image sensing device can be implemented.

[0035] A third semiconductor image sensing device according to the present invention comprises: a semiconductor image sensing element; a mounting substrate having an opening wider than at least an image sensing area of the semiconductor image sensing element and having electrode terminals arranged around the opening to be connected to electrode portions of the semiconductor image sensing element by a face-down mounting method; and a molding resin formed on a mounting region between the mounting substrate and the semiconductor image sensing element connected to the electrode terminals via bumps provided on respective surfaces of the electrode portions of the semiconductor image sensing element and on a portion of the mounting substrate which is adjacent to the mounting region, wherein the semiconductor image sensing element comprises a semiconductor element including the image sensing area, a peripheral circuit region, the plurality of electrode portions provided in the peripheral circuit region, and a plurality of micro-lenses provided on the image sensing area and an optical member having a configuration covering at least the image sensing area and bonded over the micro-lenses via a transparent bonding member and the molding resin covers the electrode portions, the bumps, and the electrode terminals and is formed by using a material which cuts off at least a visible light beam and cures with an application of a UV light beam or heat.

[0036] In the arrangement, the molding resin can prevent a reflected light beam or a scattered light beam from being incident on the image sensing area from the side surface region of the optical member and causing flare, smear, or the like. As a result, it becomes possible to implement a semiconductor image sensing device having excellent properties. Since the semiconductor image sensing element is mounted on the mounting substrate by a face-down mounting method using bumps, a thinner and more compact semiconductor image sensing device can be implemented. The semiconductor image sensing element can be securely fixed to the mounting substrate by injecting a molding resin and curing the surface layer thereof, while irradiating the molding resin with a UV light beam through the opening of the mounting substrate, and then thermally or naturally curing the molding resin.

[0037] A first method for fabricating a semiconductor image sensing device according to the present invention comprises the steps of: fabricating a semiconductor image sensing element; fastening the semiconductor image sensing element onto a mounting portion of a package to which the semiconductor image sensing element is fixed by using a fastening member; providing connection between the electrode portions of the semiconductor image sensing element and metal thin wire connection portions provided on the package by using metal thin wires; and forming a burying resin for burying the metal thin wires therein and protecting the metal thin wires, wherein the step of fabricating the semiconductor image sensing element is made of the fabrication method described above.

[0038] The method prevents flare, smear, or the like and allows a semiconductor image sensing device having excellent properties to be fabricated in simple and easy steps.

[0039] A second method for fabricating a semiconductor image sensing device according to the present invention